

Amendments to the Claims

Prior to of this application please amend the claims as follows. A complete listing of the claims are listed below:

Please cancel claims 1-6 and 15-19;
please amend claims 7 and 11; and
please add new claims 20-25.

Listing of Claims:

Claims 1-6 (CANCELLED)

7. (CURRENTLY AMENDED) A method for reducing the concentration of a metal in a substrate, said method comprising the steps of:

contacting a substantially purified metal binding protein from a brine shrimp (*Artemia*), said metal binding protein having an amino acid sequence ~~analogous to at least one metal binding protein from a brine shrimp (*Artemia*)~~selected from the group consisting of:

(1) MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS LYS CYS ALA LYS ASP CYS LYS CYS CYS LYS GLY CYS GLU CYS LYS SER ASP PRO GLU CYS LYS CYS GLU LYS ASP CYS SER CYS ASP SER CYS GLY CYS HIS STOP [SEQ ID NO:2]; and

(2) MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS LYS CYS ALA LYS ASP CYS LYS CYS [SEQ ID NO:4];

with said substrate to bind said metal to said metal binding protein.; and
separating said bound metal from said substrate

8. (ORIGINAL) The method of claim 7 wherein said substrate is a fluid.

9. (ORIGINAL) The method of claim 7 wherein said substrate is soil.

10. (ORIGINAL) The method of claim 7 wherein said contracting step is under high temperature condition.

11. (CURRENTLY AMENDED) A method for the removal of metal contaminated waste, said method compromising the steps of:

contacting a substantially purified metal binding protein from a brine shrimp
(Artemia), said metal binding protein having an amino acid sequence ~~from a brine shrimp~~
~~(Artemia)~~ selected from the group consisting of:

(1) MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS
LYS CYS ALA LYS ASP CYS LYS CYS CYS LYS GLY CYS GLU CYS LYS SER ASP PRO
GLU CYS LYS CYS GLU LYS ASP CUS SER CYS ASP SER CYS GLY CYS HIS STOP
[SEQ ID NO:2] ; and

(2) MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS
LYS CYS ALA LYS ASP CYS LYS CYS [SEQ ID NO:4];

with said metal contaminated waste to bind said metal binding protein to said metal in
said metal contaminated waste; and

separating said a bound metal from said contacted metal contaminated waste.

12. (ORIGINAL) The method of claim 11 further comprising the additional step of:
producing the metal binding protein in a modified organism.

13. (ORIGINAL) The method of claim 7 wherein said metal binding protein is
coupled to a support.

14. (ORIGINAL) The method of claim 11 wherein said metal binding protein is
coupled to a support.

Claims 15-19 (CANCELLED)

20. (NEW) The method for reducing the concentration of a metal in a substrate
according to claim 7 wherein said amino acid sequence is:

MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS LYS
CYS ALA LYS ASP CYS LYS CYS CYS LYS GLY CYS GLU CYS LYS SER ASP PRO
GLU CYS LYS CYS GLU LYS ASP CUS SER CYS ASP SER CYS GLY CYS HIS STOP
[SEQ ID NO:2].

21. (NEW) The method for reducing the concentration of a metal in a substrate
according to claim 7 wherein said amino acid sequence is:

MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS LYS
CYS ALA LYS ASP CYS LYS CYS [SEQ ID NO:4].

22. (NEW) The method for removal of metal contaminated waste according to claim 11 wherein said amino acid sequence is:

MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS LYS
CYS ALA LYS ASP CYS LYS CYS CYS LYS GLY CYS GLU CYS LYS SER ASP PRO
GLU CYS LYS CYS GLU LYS ASP CUS SER CYS ASP SER CYS GLY CYS HIS STOP
[SEQ ID NO:2].

23. (NEW) The method for removal of metal contaminated waste according to claim 11 wherein said amino acid sequence is:

MET ASP CYS CYS LYS ASP GLY CYS THR CYS ALA PRO ASP CYS LYS
CYS ALA LYS ASP CYS LYS CYS [SEQ ID NO:4].

24. (NEW) A device for reducing the concentration of metal in a metal substrate, said device comprising a support, said support selected from the group consisting of solid supports, matrices, membranes, semi-permeable membranes, powders, devices, apparatuses, liquids and formulations.

25. (NEW) The device for reducing the concentration of metal in a metal substrate of claim 24, wherein said support is a membrane.